

Keweenaw Bay Indian Community

Natural Resources Department

Annual Report 2012



The Natural Resources Department administers natural resource programs for the Keweenaw Bay Indian Community on the L'Anse, Marquette, and Ontonagon reservations as well as the western Upper Peninsula of Michigan (1842 ceded territory). These programs encompass a variety of activities, including: Lake Superior fishery assessments, Baraga county stream assessments, surface water and ground water monitoring, air and radon studies, brownfield programs, wildlife and wetland management, environmental assessments, monitoring of metallic mining and exploration activity in the Lake Superior basin, participation in the protection and enhancement of Lake Superior, and fish stocking from our hatchery. The department facilitates projects through grants from the Bureau of Indian Affairs, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, and U.S. Department of Agriculture. The Tribal Council funds hatchery operations.

Fish and wildlife staff began working in 1988 and an environmental specialist was hired in 1992. The Department was organized in 1999 and brought environmental, fish and wildlife programs under one department. The departmental staff has grown over the years to the present level of seventeen full-time, five seasonal, and various part-time positions. Our staff works closely with the KBIC Natural Resources Committee. Our department is also guided by a 10 year Integrated Resource Management Plan adopted by the Tribal Council and Bureau of Indian Affairs in 2003.

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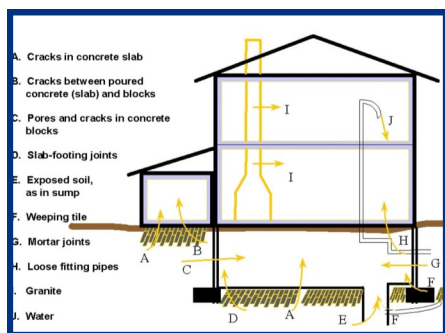
Funding Sources

- ◆ Keweenaw Bay Indian Community (KBIC)
- ◆ U.S. Environmental Protection Agency (USEPA)
- ◆ U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS)
- ◆ Bureau of Indian Affairs (BIA)
- ◆ Administration for Native Americans (ANA)
- ◆ U.S. Fish & Wildlife Service (USFWS)
- ◆ U.S. Forest Service (USFS)

Partners & Collaborators

- ◆ Lac Vieux Desert Band of Chippewa (LVD)
- ◆ Ottawa National Forest (ONF)
- ◆ Great Lakes Indian Fish and Wildlife Commission (GLIFWC)
- ◆ Bureau of Indian Affairs (BIA)
- ◆ U.S. Department of Agriculture-Natural Resource Conservation Service
- ◆ Natural Features Inventory
- ◆ Ferris State University
- ◆ Cedar Tree Institute
- ◆ Superior Watershed Partnership (SWP)
- ◆ Baraga County Cubscouts
- ◆ Baraga County Conservation District
- ◆ U.S. Forest Service (USFS)
- ◆ U.S. Fish & Wildlife Service (USFWS)
- ◆ U.S. Environmental Protection Agency (EPA)
- ◆ Michigan Department of Natural Resources (MDNR)
- ◆ Cooperative Weed Management
- ◆ Chippewa Ottawa Resource Authority (CORA)
- ◆ Michigan Technological University (MTU)





How radon can get inside your home



Several members of the National Tribal Steering Committee, including KBNRD Response Program Specialist Katherine Kruse



Sign for household hazardous and electronic waste collection event

Emergency Management

As part of the Tribal Response Program, the Environmental Response Specialist has been involved with emergency management activities. The Environmental Response Specialist is involved in quarterly conference calls with Region 5's Tribal Emergency Preparedness and Homeland Security group. In addition, the Response Specialist is involved with the joint Eastern Sector Maritime Security Committee and Upper Peninsula Port Area Committee meetings and exercises.

Radon Monitoring

KBNRD staff conducted monitoring of indoor radon gas concentrations as requested at the KBIC Natural Resources Fish Hatchery buildings, and distributed self-test kits to Tribal Members during January, which is Radon Action Month. A few ways that radon can enter a home or building is through cracks in floors and walls, openings around sump pumps and drains, or gaps around utility penetrations (pipes and wires). No elevated levels were detected in 2012.

Tribal Waste Response and Assistance Program

The Institute for Tribal Environmental Professional (ITEP) established a national tribal steering committee in order to assist with the work of the Tribal Waste and Response Assistance Program (TWRAP) and to ensure that tribal needs and priorities are addressed by this program's activities. The committee also develops and organizes the Tribal Lands Forum, an annual conference covering brownfields, solid & hazardous waste, underground storage tanks, emergency management, superfund and other topics related to environmental protection in Indian Country. KBNRD Response Program Specialist Katherine Kruse was chosen as one of the representatives for the committee.

Great Lakes Restoration Initiative

KBNRD received funding from the Environmental Protection Agency's Great Lakes Restoration Initiative (GLRI) to develop a sustainable hazardous waste collection program to serve tribal and non-tribal community members in Baraga County to prevent toxic contaminants from entering into Lake Superior. KBIC hosted two Household Hazardous and Electronic Waste Collection events and two "Milk Run" pickups for Baraga County businesses, churches, and schools. Total waste for the two collection events was 26,950 lbs. Over 18,000 lbs. of waste were collected during the Milk Runs. Construction of a permanent hazardous waste collection facility was completed in 2012. The facility will be up and running once the KBIC Transfer Station is completed.

Tribal Air Funding

A grant proposal for air program capacity building under the Clean Air Act Section 103, which was submitted in November 2011, was awarded in early 2012. Our Environmental Specialist met with EPA staff to negotiate the work plan and budget, and submitted a complete application package in March. In August, an Air Quality Specialist was hired.



Tribal Response Program

KBNRD received its initial TRP grant from the U.S. Environmental Protection Agency (EPA) in 2003, and annual funding has been provided by EPA since that time. The TRP, currently still being developed, will consist of a comprehensive set of protocols and tools to identify potentially contaminated properties, determine if areas of contamination are present on suspect properties, and to clean up and redevelop those properties that are found to be contaminated. Properties that are contaminated need to be cleaned up to a degree that ensures that human health and the environment are protected now and into the future. Currently 14 properties are enrolled as Brownfields sites under the TRP including a junkyard, a mining impacted property, dump sites and an old gas station. Some activities conducted during 2012 include:

- Risk assessments and site visits conducted at all open dump sites.
- Updated Quality Assurance Project Plan & Brownfields Management Plan
- Community outreach
- Obtained Lead Risk Assessor certification
- Maintained public record for brownfield sites
- Coordinated development of the Hazardous Substance Control Ordinance, which passed the 3rd reading by Tribal Council December 2012
- Developed Analysis of Brownfield Cleanup Alternatives reports to examine cleanup alternatives for brownfields sites with known contamination.

Solid Waste Disposal Facility

NRD staff continued to assist with the design and planning of a solid waste transfer station, which is scheduled to be constructed in 2013 utilizing funding from the Indian Health Service. The transfer station, which will accept residential solid waste from Baraga County, will be part of a comprehensive Waste Management Facility and located in the KBIC Industrial Park. There will be capacity for future expansion of services, including recycling and composting. Several planning meetings were held, and staff reviewed design plans, assisted with preparing a grant proposal for additional funding, and discussed operational and staffing needs. Staff also continued to participate in the pilot peer match project for solid waste technical assistance through EPA.

Underground Storage Tank (UST) Removal

NRD Staff assisted with preparing a grant proposal for funding to remove two abandoned USTs at the KBIC Commodity Foods warehouse, which was funded in early 2012. Two USTs were discovered at the site when improvements were made to the existing building and were most likely associated with the former grocery store and gas station that operated at the site. USTs most commonly store hazardous materials and/or petroleum products and can result in a release to the environment from leaks or being improperly maintained. A Request for Proposals (RFP) for the actual removal was published, and a removal contractor was selected. In September, two USTs were successfully removed from the property. Removal oversight and site investigation, including sampling, for proper site closure, was performed by the Environmental Response Program Specialist.



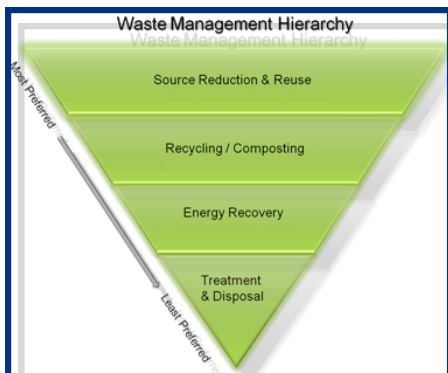
Example of a brownfield site on the KBIC reservation



Example Transfer Station



UST removal and KBIC Commodity Foods warehouse



A hierarchy of waste management activities from least to most preferred



Environmental site visit at the proposed KBIC Gas Station project in Marquette Township



Example of improper waste disposal

Solid Waste Management Plan

In 2012, KBNRD received additional funding under the Environmental Protection Agency (EPA) General Assistance Program (GAP) to update and revise the KBIC Solid Waste Management Plan, which was originally approved in 2005. An integrated waste management plan describes current management activities and sets a plan of action for future management of solid waste or household trash, as well as household hazardous waste, and special wastes such as construction and demolition debris, and can lower costs and reduce the impact on the environment. Proper waste management includes collection, disposal facilities, waste reduction such as recycling and composting, waste prevention, and education, and reduces improper disposal which can harm human health and the environment. A Request for Proposals (RFP) for updating the plan was published in June and a consultant was selected by Tribal Council in July. Several drafts have been completed and reviewed. The final draft will be presented to Tribal Council for final approval.

Environmental Review

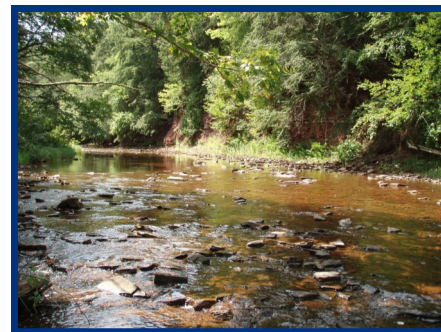
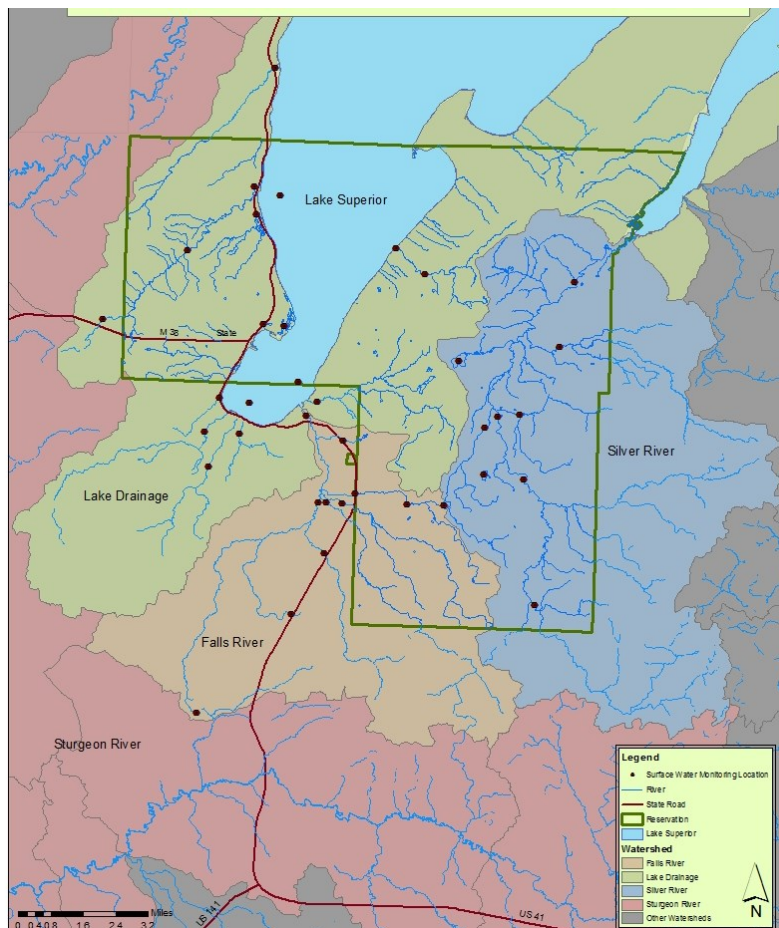
Environmental review activities are required under the National Environmental Policy Act (NEPA) for federal projects, including those that receive federal funding. Environmental reviews assess the impact a proposed project will have on the environment, as well as other related conditions including cultural resources and socio-economic conditions, and vary in scope depending upon the level of disturbance or impact a project may have. NRD staff performed several environmental review activities as required under the National Environmental Policy Act (NEPA) for the following KBIC projects in 2012:

- Several tribal member individual water and wastewater projects
- One community water system project
- Construction of a gas station in Marquette Township and formation of a tribal corporation
- Staff also assisted consultant who is completing an Environmental Assessment (EA) for the KBIC Gas Station project and trust acquisition. This is required for the fee-to-trust application to the Bureau of Indian Affairs (BIA).



Baseline Data Collection

The surface waters within and adjacent to the L'Anse Reservation are critical resources for both human and environmental health. In 2012, Water Resources Staff sampled up to 29 sites for up to 29 parameters as selected in our two year cycle for water quality. The sites were sampled in each of the four quarters during the fiscal year. This practice has been ongoing since baseline sampling was completed in 2005.



East Branch of the Sleeping River on KBIC land in Ontonagon County



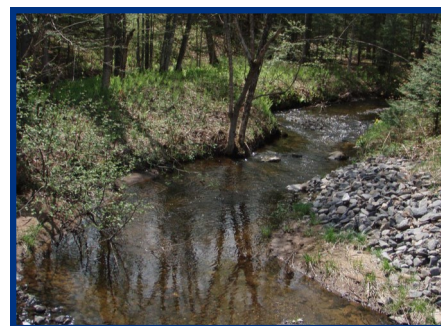
Water resources specialist, Micah Petoskey collecting baseline data

Residential Well Sampling

KBIC evaluates groundwater for contamination by nitrate, coliform, and other contaminants. In 2012 residential homes were sampled on the Reservation on an as needed basis or at the request of the home owner. When collection of groundwater related information is complete, data will be used to create maps to identify any groundwater quality problems.

Tribal Water Quality Standards

In 2012 KBIC continued development of the application for Treatment as a State (TAS) through the EPA as part of the process for establishing tribal water quality standards. The establishment of tribal water quality standards will meet the unique needs of the Community by instituting a heightened protection of Reservation waters mandated by the Community's cultural, medicinal, and spiritual uses of surface water.



Gomanche Creek



Recirculating tanks in main hatchery building



Tagging and stocking retired adult lake trout into Keweenaw Bay



Natural Resources Technician Pat LaPointe holding a captured lake sturgeon during assessment efforts

Hatchery Upgrades

The hatchery facility is currently in the process of an equipment upgrade. The purpose of the upgrade is to reduce water use through recycling, reduce groundwater pumping, improve water quality and systems monitoring, and improve our alarm and backup systems. The first part of the systems upgrade was actually completed in 2010 a new backup generator transfer switch was installed. Reducing water use by 25% could reduce the amount of groundwater pumped by over 10 million gallons per year. Work in 2012 included, installing groundwater pump motor controls, monitoring systems, a new alarm system, added oxygen injection equipment and reconfigured the water distribution system. An advantage of using the variable frequency drive with our pumping is reduction in energy and water use. The recirculation aquaculture system has been recycling slightly less than 50% of all water used in the main building since August 2012. Two years ago, 584 gallons per minute were needed for our facilities versus the 300 gallons per minute (only 100 in the main building) used now. The two year study to characterize the hydrology of the aquifer used by the hatchery was completed by Aqua Terra Tech Enterprise and Geological Engineering Senior Design students.

Rearing & Stocking

Approximately 50,103 lake trout, 54,299 stream brook trout, 860,768 walleye fry and fingerlings were reared and stocked in 2012. Fish and eggs are stocked into Lake Superior, Portage Lake and various Western U.P. rivers and streams on and off the Reservation.

Lake Trout Assessment

Spring, summer and fall lake trout surveys were conducted throughout Keweenaw Bay and western Lake Superior following protocols established by GLIFWC and the Lake Superior Technical Committee. The main objective of the spring survey was to assess over winter survival of pre-recruitment lake trout. Results for 2012 surveys indicate a trend of declination in abundance of this age class of lake trout. Summer surveys assessed juvenile lake trout abundance and also indicated a possible decline in abundance. Fall surveys focus on spawning lake trout abundance on local reefs. Results indicate stable abundance on the reefs. During the fall surveys, eggs were collected from lake trout and were fertilized and returned to the hatchery for incubation.

Lake Sturgeon Research

KBNRD successfully captured, tagged and released several juvenile and adult lake sturgeon in Keweenaw Bay in the spring and early summer of 2012. Primary objectives of this work are to tag and recapture as many lake sturgeon as possible as recaptures are vital in increasing precision in population estimates for this imperiled species. KBNRD also worked cooperatively with USFWS, MIDNR, WIDNR, CORA, Bad River, Red Cliff, Ontario Ministry of Fisheries, and GLIFWC to conduct a Lakewide Standardized Lake Sturgeon Survey. KBNRD also assisted with survey and data collection efforts at South Portage Entry and the Ontonagon River.



Disease Surveillance

KBIC submits fish samples for screening for the exotic virus Viral Hemorrhagic Septicemia (VHS). VHS has been detected in all of the Great Lakes, including Lake Superior as of 2010. Passive collection of information from the public regarding observations of potentially diseased fish (as evidenced by fish kills or fish exhibiting irregular behavior or clinical signs of sickness) is also done. This disease screening is considered important to many agencies managing the Lake Superior fishery, and KBNRD continues to assist in disease screening efforts throughout the area.

Sea Lamprey Control

Since 2006-2007, the USFWS and GLIFWC have subcontracted KBIC to maintain and collect catch data from an adult sea lamprey trap on the Silver River Watershed. By assessing adult sea lamprey populations in the Silver River, estimates of potential larval lamprey production for the system can be generated, which in turn gives sea lamprey control experts vital information on how to most effectively eradicate larval lamprey before they can return to Lake Superior to attack more fish. The trap was checked twice a week from April 22-June 23. Thirty-five adult sea lamprey were marked and released from the Silver River trap. The Silver River Watershed trap is one of seventeen traps in the Lake Superior basin. Total catch for the seventeen traps in 2012 was 4,707 adult sea lamprey.

Commercial Fisheries

In 2012 there were 11 active tribally licensed commercial fishermen. License year runs from May 1st of 2011 through April 20th, 2013. Total reported commercial harvest for the 2012 calendar year was 48,663lbs of lean lake trout, 58,884lbs of white fish, 1,593lbs of siscowet and 2,947lbs of herring. KBNRD staff collects monthly catch reports from licensed commercial fishers, and monitors commercial harvest throughout the year. Collected data is compiled into existing databases and forwarded to GLIFWC Commission for use in regional interagency fishery management. KBNRD communicates with GLIFWC regarding commercial harvest monitoring activities.



Eggs collected from spawning walleye in Portage Lake



Wildlife Technician Kyle Seppanen deploying a drift net to catch young sea lamprey on the Little Carp River



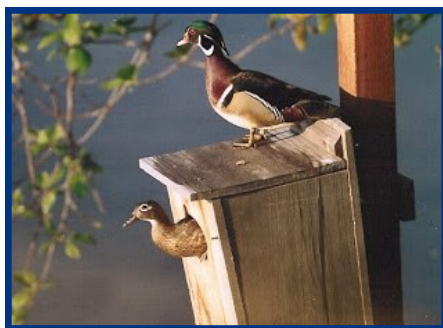
Local youth with brook trout caught during the Baraga County Fair from the KBNRD trout tank



Black bear cubs caught on remote camera



Wildlife technician, Kyle Seppanen checking remote cameras during winter



Wood ducks using a nest box. Photo credit: Michigan State University

Wetland Wildlife & Habitat Inventory

Funds from BIA were received by KBNRD for data collection pertaining to endangered species on the reservation and for development of a Tribal Wolf Management plan. Wolf and cougar track/sign were monitored on and near the KBIC Reservation. Remote cameras were also deployed for detection of wolves and potential presence of cougar. Many wolves were detected via track surveys and camera survey, three areas near the Reservation had confirmed sign of cougar.

A KBIC Wolf Management plan was drafted, reviewed by KBIC committees, and presented to the community via the KBIC website for comments. KBIC Tribal Council passed a Resolution opposing all sport hunting and/or trapping of wolves in November 2012. KBIC Tribal Council reviewed three drafts and approved a final KBIC Wolf Management Plan that declares KBIC Home Territory as Wolf Sanctuary where hunting/trapping of wolves is not allowed.

Upland/Riparian Wildlife & Habitat Inventory

Fifty-one study sites were established with remote cameras on the Keweenaw Bay Indian Reservation between January 2010 and November 2011 in upland and riparian areas. Preliminary results show that a total 23 wildlife species were detected of which 13 are considered "target" carnivore and furbearer species that were the focus of the study. Study sites were also surveyed for plant and habitat characteristics around each camera location. Approximately 228 plant species and 30 tree and/or shrub species were identified within the study sites during the two year study period.

Data from this study is currently being summarized to be presented to the community through an updated KBIC Natural Resource Department website and community meetings beginning in the spring of 2013. Baseline information gathered from this wildlife study will be taken into consideration as we develop a KBIC Tribal Wildlife Management Plan for the KBIC L'Anse Indian Reservation.

Circle of Flight Waterfowl Nest Boxes

Each winter waterfowl nest boxes throughout the reservation are checked for signs of use by wood ducks and other wildlife. Annual checks of the boxes have revealed use by wood ducks (~20%), flickers, wasps, other waterfowl (mergansers), and small mammals.

Circle of Flight Waterfowl Surveys

In 2012, waterfowl surveys took place weekly for 13 consecutive weeks at the Head of Keweenaw Bay, Mud Lakes and Sand Point, and 5 weeks at Huron Bay. The average number of waterfowl observed per site visit was 53 waterfowl. A total of 2,338 waterfowl were observed throughout the surveillance period at all sites combined. There were 21 species detected including Wood Duck, Common Merganser, Gadwall, Goldeneye, Greater Scaup, Green Winged Teal, Hooded Merganser, Mallard, Pied Billed Grebe, Red Head, Richardson Goose, Ring Neck Duck, Tundra Swan, American Coot, American Widgeon, Black Duck, Blue Winged Teal, Bufflehead, Canada Goose, and Canvasback. Unusual species to note this year were the large groups of Richardson Geese that stayed in the area for about three weeks and a very rare sighting of five Surf Scoter on Huron Bay.

Annual Midwest Crane Count

In April, 2012, the KBNRD and several volunteers from the local community (including local private property owners) assessed 13 different areas of Baraga County for cranes, attempting to document the number of individual cranes as well as breeding pairs. The only way counters can document breeding pairs is to document the “Unison Call”, with 2 birds singing different songs in tandem. The 2012 Crane Count involved more than 25 counters, and over 2 dozen individual cranes were counted, with 9 breeding pairs confirmed.

Frog & Toad Surveys

Surveys for frogs and toads are conducted during the breeding period which usually spans from April through June. Species detected in 2012 include spring peeper, wood frog, Cope’s gray treefrog, leopard frog, green frog, and American toad. Survey areas include Menge Creek, Falls River, Sand Point sloughs, Pequaming bog, Mud Lakes, and Indian Cemetery road.

Turtle & Salamander Surveys

With the help of the summer Youth Conservation Crew (YCC), KBNRD staff continued turtle and salamander surveys at several locations throughout the Reservation. The surveys were prompted by the Lake Superior year of intensive monitoring under the Lake Superior Lakewide Management Plan. The year of monitoring included surveys of reptiles and amphibians throughout the Lake Superior Basin. KBNRD plans to establish turtle and salamander monitoring locations to be surveyed annually by the YCC.

KBIC Studies Pine Marten with Partnership Cooperation

KBIC Natural Resource Department captured and ear tagged five pine marten over a seven day period in July 2012 assisted by partner researchers from Little River Band Tribe, Grand Valley State University, and Mesker Park Zoo. Partners came from lower MI to capture pine marten and obtain genetic material along with additional health information to compare marten from the lower peninsula with those from the upper peninsula. The most notable difference in U.P. martens was a noticeably higher blood titre of antibodies from *Toxoplasma*, a parasite common in wild and domestic cats. Partners would like to identify the parasite to a specific genotype with samples from trapped pine marten in 2013.

Camera traps were maintained July through November to record number of tagged versus untagged animals detected at four separate study locations. Data collected will be used to calculate a population estimate. Although five marten is not a very large sample size, it will provide a snapshot of our local population. KBIC intends to continue working with partners to explore the overlapping habitat use of pine marten and fisher which doesn’t often occur in other areas where pine martens have been studied.



Sandhill crane pair observed during 2011 crane count



Mink frog



Captured pine marten with ear tag ready for release



Bobcat caught on KBIC remote camera



Culvert removal on the Falls River



Falls River site after culvert removal

Wild Turkey Habitat Improvement

Wild turkey populations have increased locally thanks to the dedication of members of the Keweenaw Cutters Chapter of the National Wild Turkey Federation. Nick Lindemann, President of the KC Chapter provided information to the NRD as well as the Natural Resource Committee about successful habitat projects, winter feeding programs and monitoring of turkeys that KC members conducted over the years. He also asks that KBIC consider changing the Tribal Hunting Code to allow only male turkeys to be hunted for at least two years in order to help grow and sustain a huntable population of wild turkey in the area.

In October 2012, KBIC NRD received 25 crab apple trees from the KC Chapter for habitat improvement planting on the Reservation. The trees have been planted near the KBIC walleye ponds where wild turkeys are known to pass through. Many thanks go out to members of KC for their dedication to local turkey management. We look forward to future partnership projects and their valuable input into the KBIC Wildlife Management Plan for turkey management.

Land Use Management Planning—Cooperation with KBIC Realty Department

KBIC NRD worked throughout 2012 with Jason Ayers of the Realty Department in making sure the Land Use Management Plan and other plans such as the KBIC Wildlife Management Plan will have compatible goals. Through a cooperative effort, maps were created that help designate wetlands, river corridors and conifer dominated habitat as being preserved for wildlife, community access for hunting and gathering and for connectivity with other wilderness areas leading in and out of the Reservation. Maps were also created showing the most appropriate locations for various types of development. This is a fine example of inter-departmental cooperation providing the most effective resource management through shared ideas.

Fish Passage Improvement Projects – NRCS funded, BIA funding, Lake Superior Watershed Partnership Funding, Baraga County Road Commission

With GLRI support, the KBIC (NRD and Public Works) is working with USDA-NRCS and the Baraga County Road Commission (BCRC) to improve the health of several stream systems in and around the Reservation by installing culverts or bridges that allow passage of aquatic organisms upstream and downstream. Road culverts are improved by replacing those that are either too small or perched above the river bottom, thus impeding fish passage and proper water flow. Two of the twelve fish passage improvement projects were completed in 2012; one at Gomanche Creek crossing on Indian Road and the other at the Falls River crossing on Golf Course Road. Four more of the twelve culvert replacements are planned for completion in 2013.

Wildlife Habitat Improvement on Sand Point – EPA GLRI (2011-2012)

Thanks to funds through EPA and dedicated work by KBIC Public Works, Lake Superior Tree Farm, Natural Resource Conservation Service, and many staff from the NRD the two year GLRI habitat improvement project is complete for the restoration of 33.5 acres of capped stamp sands on Sand Point. Two gardens are installed, one at the south entrance and one at the center entrance. Planting of native species in the south garden took place for two growing seasons so far and looks spectacular. Planting of wildflower seed in the center garden will take place spring 2013. Weed control and additional planting will continue for both gardens and throughout the study area for years into the future. Native plant species selected for this project were based on their highest likelihood for survival in the harsh conditions of the coastal stamp sands and for their benefit to birds, wildlife and pollinators.

Fifty-eight soil mounds and 34 total half-acre seed plots were installed and planted with 29 species of native wild seed. We intend to measure the success and number of species growing in these seed plots every year in August. Nineteen species of trees and shrubs were also planted throughout the 33.5 acres. These plantings will help to protect the cap and provide shelter from the wind and blazing sun so a greater variety of plant species can survive. Over time the mounds, trees, shrubs and numerous (100+) decorative boulders will help lift and change the steady wind blowing from the lake. The added relief in topography will provide areas of suitable microclimate that are better for long-term plant growth. Be sure to stop by Sand Point and enjoy a long walk along the extensive gravel pathways and fitness trail through the area.



One-acre native plant garden at the sand Point Restoration Site



Volunteers helping to plant trees at Sand Point



Walking trail and bench at Sand Point



Cone flowers in the one-acre native plant garden, Sand Point



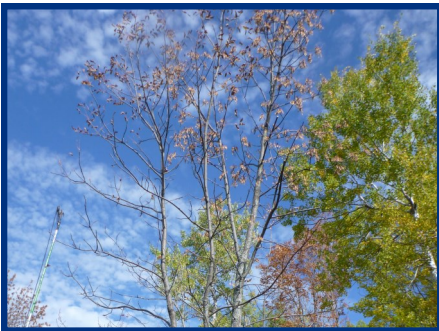
Plants in greenhouse ready for transplanting

Greenhouse

In 2010, a tribal green house was built as part of The Zaagkii Project, a cooperative pollinator project with The US Forest Service and The Cedar Tree Institute. In 2012 thirty-three species were grown in our greenhouse and planted at the Sand Point Restoration site and in seed plots; this is the third season for the greenhouse. Seed was collected from twenty native species; ash seed was sent for long-term cold storage and the rest will be used in our greenhouse for restoration sites. Some of the species grown include: tobacco, sweet grass, white sage, pearly everlasting, big and little bluestem, black-eyed susan, wild columbine, ginger, fireweed and milkweed. Educational signage was designed concerning native species and pollinators.

Wild Rice

KBNRD has planted thousands of pounds of wild rice at more than 13 sites within Baraga County. Huron Bay has a possible 35 acres of wetlands with favorable conditions for wild rice, the largest site bordering the reservation. With the limited amounts of seed available, planting was concentrated here and on a small test plot at Parent Lake in 2012. This year, there was rice harvested at Sand Point and tribal members were invited to rice camp at LVD where they had the opportunity to learn how to make equipment, harvest, and process.



Top of Ash tree loaded with seed

Ash Seed Collection

Ash has cultural and historical significance for the Anishinaabe. As part of the preservation of ash trees for future generations, KBNRD is part of a cooperative effort with BIA Forestry and USDA Natural Resources Conservation Service for collecting ash seed. In 2012 seed was collected from 4 trees; KBIC collection has a total of 103 from all the years. An agreement with the USDA Agricultural Research Service in Colorado provides for long term cold-storage of ash seed collected from KBIC lands.

Invasive Plant Species

In 2012 staff continued with monitoring, locating, and working on controlling non-native invasive plant species on the reservation. In summer and into the fall, attention was focused on five invasive species: purple loosestrife, Japanese barberry, spotted knapweed, marsh thistle and Eurasian watermilfoil. Actions are being taken to control these species on the reservation including beetle release, cutting, pulling, and in some case use of herbicides (Japanese barberry). KBIC collaborates with ~9 other agencies/groups in an effort to protect our natural resources from invasive species. U.S. Forest Service, Great Lakes Indian Fish and Wildlife Commission, Midwest Invasive Plant Network (MIPN), and Baraga Conservation District are a few of our partner organizations. Other species of concern include exotic honeysuckle, marsh thistle, giant knotweed and common and glossy buckthorn. A public weed pulling event was held at Sand Point in the summer.



KBIC NRD Plant Technician using chemicals to control Japanese barberry



Great Lakes Restoration Initiative Capacity Funding

The Lake Superior Program Coordinator was hired to fill several gaps in capacity and is providing active and regular participation in the Binational Program and the Lakewide Management Plan (LaMP) process, additional outreach and education for the community and for tribal youth, helping develop a plan to address issues of Climate Change on the Reservation, and link KBIC activities in natural resource management to related activities throughout the basin. Some of the activities completed by the new Lake Superior Program Coordinator position include:

- Lake Superior Day Beach Clean-up
- Development of KBIC Natural Resources Department Quarterly Newsletter, *Babaamaajimowin Aking*
- Participation in Binational Program activities through the Superior Work Group and subcommittees
- Press releases and newsletter articles to keep the community informed of KBIC NRD activities and events
- Creation of informational brochures for invasive plant species on the reservation and others
- Attending local, regional, and international conferences, meetings and trainings

Mining

A mining rush is underway within KBIC's ceded territory and the Lake Superior basin. Mining, particularly sulfide mining, and related activities have the potential to significantly impact treaty rights, treaty reserved resources, area ecosystems, and the health and welfare of the community and future generations.

Before GLRI program assistance was available to hire a Mining Technical Assistant, KBIC lacked adequate capacity to comprehensively track mining exploration and potential mining activity within the ceded territory and Reservation, compile technical and scientific data, provide outreach to the community, and assist the KBIC Government in decision making processes related to mining. In 2012, some of the activities of the Mining Technical Assistant included:

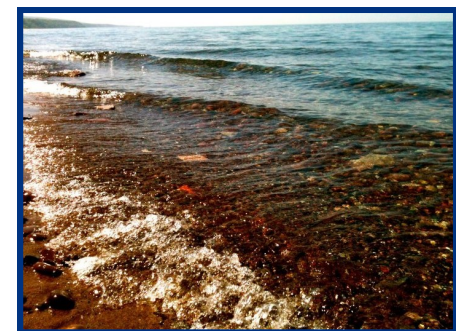
- Participation in regional mining related working groups and conference calls
- Assisting in review of mining related permit applications, including those associated with the Orvana Copperwood and Rio Tinto Eagle Projects
- Collecting information related to mining, mineral rights and exploration on the Reservation and within the ceded territory
- Providing outreach/education opportunities including a monthly film series, information tables at powwows, tribal newsletter updates, website development, radio interviews, and presentations to youth, high schools, universities, and various other forums and conferences.
- Hosting a Tribal Mining Forum in May
- Attending conferences, meetings and trainings including a U.S. EPA Hardrock Mining Conference in April



Volunteers enjoying Lake Superior after collecting trash along the beaches all morning for Lake Superior Day



Rio Tinto Eagle Mine in Marquette County, MI
Photo credit: Jeremiah Eagle Eye



Lake Superior near the Orvana Copperwood proposed mine site



Hancock Middle School students learning about the hatchery facilities and fish rearing



Kids fishing during the derby



Students at the 2012 Environmental Fair learning about tornadoes

Tours

KBNRD provides tours to many groups throughout the year. Some of these groups include visiting college students and instructors from MTU, NMU, and KBOCC, local grade school classes, federal, state and NGO agency employees, the Michigan Tribal Environmental Group, Youth Conservation Crew, community members, and many others. Tours can be scheduled at any time, but may be dependent on season and happenings around the hatchery buildings. Guest speakers can be arranged on an individual basis.

Youth Conservation Crew

In the summer of 2012 we worked with Superior Watershed Partnership to provide opportunities for tribal youth by coordinating summer activities for a tribal youth conservation crew (YCC). YCC activities included hatchery cleaning and maintenance, native plantings and gardening, beach and road cleanup projects, habitat rehabilitation, invasive species control, lamprey assessment, fish stocking, stream and fishery assessments, and turtle and salamander surveys. A fair portion of time was also spent on trail maintenance and creation at Sand Point and Mud Lakes.

Annual Kid's Fishing Derby

This year marked the 10th annual KBIC Kid's Fishing Derby at Sand Point near the Lighthouse Pond in Baraga. Attendance was recorded breaking with 370 kids participating (up from 353 in 2011). Over 100 people volunteered during the Derby including local sportsman's club members, state and federal agency employees, community members, 4-H, KBIC summer youth programs, and many more. Activities include pond fishing contest, inner tube casting, Velcro fishing, big trout tank fishing, moon walks, and other small games. Prizes are given away for the most fish, biggest fish, and catching a tagged fish.

Annual Environmental Fair

The 3rd Annual KBIC Environmental Fair was held on April 25, 2012 at the KBIC Niiwin Akeaa Center. The annual educational event is organized by the KBIC Natural Resources Department and focuses on providing environmental and natural resource education to school-aged children. This year's event hosted 105 second through fifth graders from area schools that attended the event at various times throughout the day. Displays were provided by the Natural Resource Department, as well as several outside organizations and agencies. Each child received a 'goody-bag' with an activity book, educational materials, and 'treats'.

Volunteers

There are a number of volunteer opportunities available throughout the year with the KBNRD. These opportunities include greenhouse planting and transplanting to Sand Point, fish tagging, wildlife camera checks, invasive plant control, and KBIC sponsored events such as the Kid's Fishing Derby and Lake Superior Day beach clean-up. We are thankful to all of our volunteers for their support and assistance throughout the year. We hope others will consider volunteering in the future.



Tree Give-away

Food sovereignty continues to be encouraged with the 11th annual tree give-away which was held by lottery in 2012. There were more than 100 plants for the give-away including blueberries, asparagus, strawberries, roses, lilacs, raspberry, blackberry, strawberry, grapes, rhubarb, tomatoes, peppers, herbs, apple and pear trees. A community gardening site was approved by the Tribal Council for 1 acre off Brewery road near the walleye ponds.

Lake Superior Day

The KBIC NRD organized a beach cleanup on July 13th in celebration of Lake Superior Day. About 0 people including Natural Resources Department staff, tribal youth crews, and area community members cleaned approximately 7 miles of Lake Superior beaches from Assinins/Sand Point all the way around the head of the Bay and up the eastern shoreline to Pequaming. An estimated 40 bags of trash were collected off the beaches and properly disposed of. Lake Superior Day, which was created in the early 1990's by the Binational Forum, is officially the third Sunday in July. KBIC will continue to hold annual events in honor of Lake Superior Day.

Trail System Expansion

Wetlands with their wide diversity of wildlife are of great interest but many individuals are deterred from venturing into them due to dense vegetation, standing water, and deep organic soils. KBNRD maintains an observation tower, trails, and floating docks at Mud Lakes and Sand Point Sloughs wetlands. This year the trail system was expanded at both locations with the help of the Summer Youth Crew; floating docks, boardwalks, and clearing. Additional turtle platforms have also been added to nearby waters, gravel paths have been added thru the Sand Point capping project, and a fitness walk will be in place by the end of 2012. Many departments and committees are working together on this trail and plan to continue with additions next year such as a medicine wheel garden, signage, and trail system brochures. The trail system provides a unique opportunity to learn more about our wetlands, culture, and enjoy some exercise. It borders the Lighthouse, runs thru Sand Point wild rice beds and stamp sand restoration site and Assinins, ending near old US41.

Award Recognition

Former KBIC NRD Director, Todd Warner, received the Biologist of the Year award posthumously from the Native American Fish & Wildlife Society.



Trees for the giveaway



Volunteers collecting trash along the beaches for Lake Superior Day



New boardwalk along the Mud Lakes trail system



New Hires

With the wide array of activities that go on around the NRD in the summer we often find that we need extra help to get things done efficiently. This summer NRD worked with KBIC TERO and CEO office as well as the BIA to provide jobs for tribal members and increase capacity for the NRD plant program. Through the Workforce Investment Act (WIA) the CEO office and TERO were able to offer NRD three full-time employees for 2-3 months. These individuals worked on a variety of projects including hatchery maintenance, trail maintenance, native plants and invasive control and wildlife remote camera work. As a result of the WIA employee's exemplary performance, training received, and the increased need in the NRD invasive species program, the CEO's office was able to identify money through the KBIC Forestry Program to keep these employees on at the NRD. It was recognized that a vital part of Reservation Forest Management involves invasive species inventory and control, mapping of harvesting and gathering areas, and ash seed collection. Additional funding was provided through the Great Lakes Restoration Initiative (GLRI) through the BIA to fund five full-time, term position for the summer of 2012. These positions were specifically for the plant program, focusing on invasive species inventory and control. We hope to be able to provide employment opportunities at this advanced level in the future.



Gathering

Plant gathering is enjoyed by many tribal members in many different ways; berry picking, cranberries, maple syrup, wild rice, boughs, medicinal and non-medicinal plants. We assist tribal members in gathering with maps, workshops, information, finding different species, and checking for harvestable areas. Some of the species grown in the KBIC greenhouse are culturally significant plants in high demand; sweetgrass, sage, and bee balm are a few. These species are currently being added to our restoration site at Sand Point but we are also working on having larger harvestable areas for tribal members. This year, we had more people in our plants program and were able to devote more time to assist our Traditional Medicinal Clinic. Many enjoyable hours were spent with teachings and finding, gathering, and processing plants with the Cultural Committee. It was a great reminder of the importance of looking at a whole ecosystem and protecting a variety of our habitats for sacred gathering. With land use discussions ongoing, ensuring sacred gathering areas where culturally significant plants are protected and available to the KBIC community is a priority. This year several cranberry bogs were checked for fruit production after concern was expressed on decreasing production; MTU was contacted as a source for technological improvements for sugarbushes; and harvesting maps were given for land use planning.





EMPLOYEES



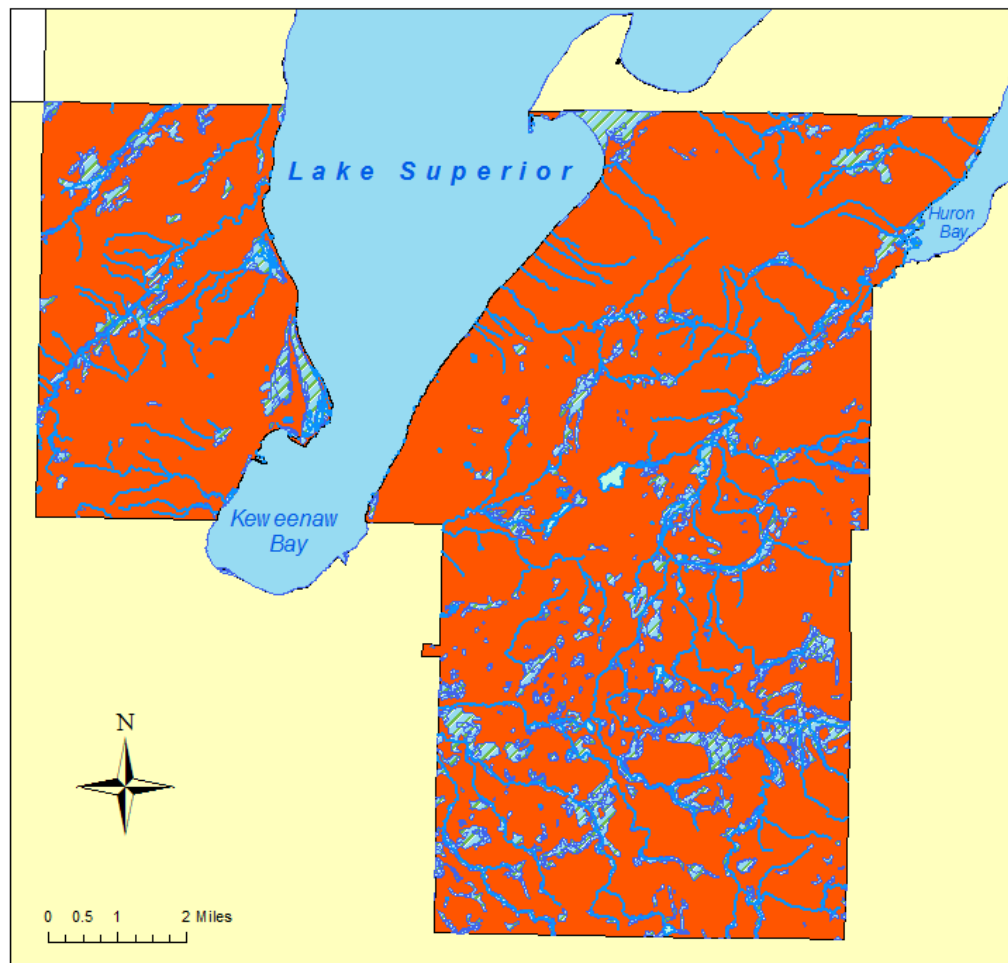
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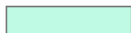



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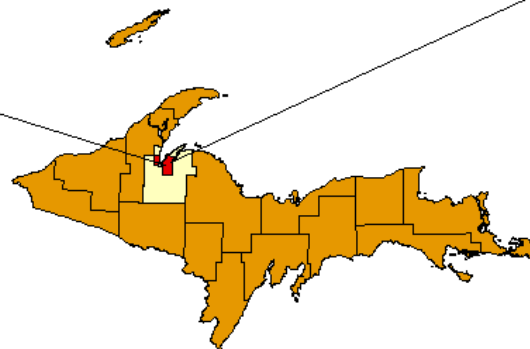


KBIC L'Anse Reservation



Legend

-  Rivers
-  Lakes
-  Wetlands
-  KBIC L'Anse Reservation
-  Baraga County



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